USER'S INFORMATION, MAINTENANCE AND SERVICE MANUAL

HIGH EFFICIENCY
CLAM TUBE HEAT EXCHANGER SERIES
MODELS: UGAE
(Single Stage Upflow Only)

ISO 9001
Certified Quality
Management System

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- Go to website at www.york.com click on "contact", then click on "contact form" and follow the instructions.
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York International
Consumer Relations
5005 York Drive
Norman, OK 73069

The manufacturer recommends that the user read all sections of this manual and keep the manual for future reference.

⚠WARNING

FIRE OR EXPLOSION HAZARD - Failure to follow safety warnings exactly could result in serious injury, death, or property damage.

— Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

— WHAT TO DO IF YOU SMELL GAS:

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone (including cell phone) in your building.
- Leave the building immediately.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

— Installation and service must be performed by a qualified installer, service agency or the gas supplier.

SECTION I: USER'S INFORMATION

SAFETY

1. The furnace area must be kept clear and free of combustible materials, gasoline and other flammable vapors and liquids.
2. Insulating materials may be combustible. The furnace must be kept free and clear of insulating materials. The furnace area must be examined when installed in an attic or other insulated space or when insulation is added to be sure that the insulation material has been kept away from the furnace.
3. The furnace needs air for combustion in order to operate properly and safely. Do not block or obstruct air openings on the furnace, air openings to the area where the furnace is installed, or spaces around the furnace.
4. Follow the instructions exactly as shown on the OPERATING INSTRUCTION LABEL or the Start-up and Shutdown Instructions on Page 4 of this manual when lighting the furnace or turning the furnace off.
5. Should the gas supply fail to shut off or if overheating occurs, shut off the gas valve to the furnace before shutting off the electrical supply.
6. Do not use this furnace if any part has been under water. A flood-damaged furnace is extremely dangerous. Attempts to use the furnace can result in fire or explosion. A qualified service agency should be contacted to inspect the furnace and replace all gas controls, control system parts, electrical parts that have been wet or the furnace if deemed necessary.

7. NEVER...Store flammable materials of any kind near your furnace. Gasoline, solvents, and other volatile liquids should be stored only in approved containers outside your home. These materials vaporize easily and are extremely dangerous.
8. NEVER...Store cleaning materials near your furnace. Materials such as bleaches, detergents, powdered cleansers, etc., can cause corrosion of the heat exchangers.
9. NEVER...Use the area around your furnace as a storage area for items which could block the normal flow of air. This flow of air is required for ventilation of the various furnace components.

⚠WARNING

FIRE OR EXPLOSION HAZARD

This furnace is designed and approved for use with Natural Gas and (LP) Propane Gas ONLY. DO NOT BURN ANY LIQUID FUEL OR SOLID FUEL IN THIS FURNACE.

Burning any unapproved fuel will result in damage to the furnace heat exchanger, which could result in Fire, Personal Injury, and/or Property Damage.

DESCRIPTION (75 MBH INPUT MODELS)

This furnace can be installed in the upflow position. Figure 1 shows a typical model in the upflow position. The furnace is equipped with an induced-draft vent blower and atmospheric burners. Combustion air is taken through roof jack and drawn into the burners through the louvers in the front panel. Flue gas is drawn from the heat exchanger by the vent blower and discharged through the inside flue pipe to the outside atmosphere.

This is a forced air furnace. The furnace circulating air blower draws cool air from the house, passes it over the hot furnace heat exchanger and circulates the warmed air through the ductwork to the house.

The furnace is equipped with the controls necessary for proper operation. The various components referred to in this manual and on the furnace rating plate are identified in Figure 2.

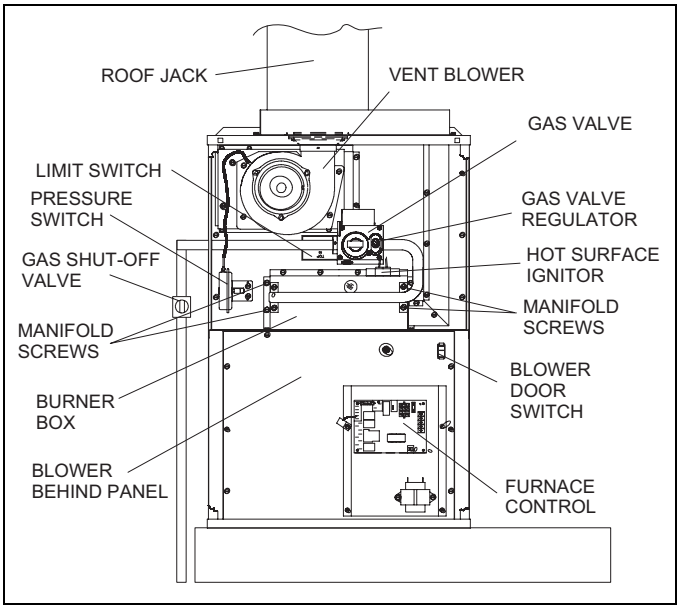


FIGURE 1: Component Locations

INSTRUCTIONS FOR EXAMINING THE FURNACE INSTALLATION

It is the owner's responsibility to ensure that an annual inspection of the entire heating portion of the unit is made by a qualified service agency. Examine the furnace as outlined below in steps "1 - 6" before each heating season. Use Figures 2 and 3 for visual reference.

1. Examine the heat exchanger, through a field installed access panel located on the supply air plenum. Visually examine the exterior sections of the vent/combustion air piping and the vent connectors to be sure that they are physically sound without holes or excessive corrosion.
2. Examine the vent pipe making sure it is firmly in place, that it slopes slightly upward and is physically sound without holes and all of the connections are secure.
3. Examine return connections
   - For Modular Homes:
     a. If the furnace has a return air duct, examine the return air duct connections to make sure they are physically sound, sealed to the furnace casing, and the ducts terminate outside the space containing the furnace.
     b. If the furnace does not have a return air duct, examine the return air filter rack connections to make sure they are physically sound, sealed to the furnace casing.
   - For Manufactured (Mobile) Homes:
     a. Examine the return air filter rack connections to make sure they are physically sound, sealed to the furnace casing.
4. Examine the furnace casing making sure the physical support is sound without sagging, cracks or gaps. Examine the furnace base making sure it is physically sound without cracks, gaps or sagging and has a good seal.
5. Examine the furnace casing for obvious signs of deterioration.
6. Examine the burner flames to make sure the burners look like they are operating properly. The burner flames for natural gas should appear blue with a few yellow tips. The burner flames for propane gas should appear blue with moderate yellow tips. The flame should appear cylindrical in shape and should extend from the end of the burner into the heat exchanger. Refer to the pictorial sketch shown in Figure 2 as a comparison to the actual flame.
7. Examine the furnace as outlined above in steps 1 - 6 before each heating season. Use Figure 3 for visual reference.

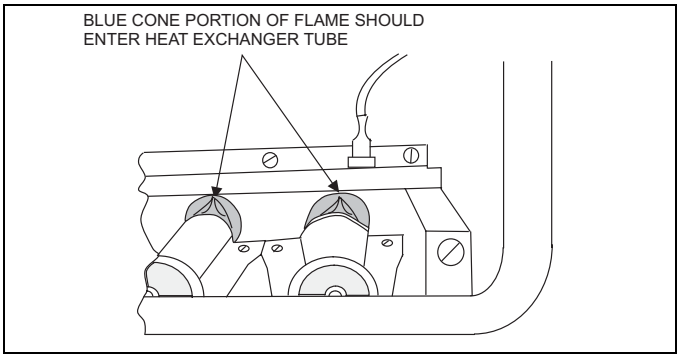


FIGURE 2: Burner Flame Drawing

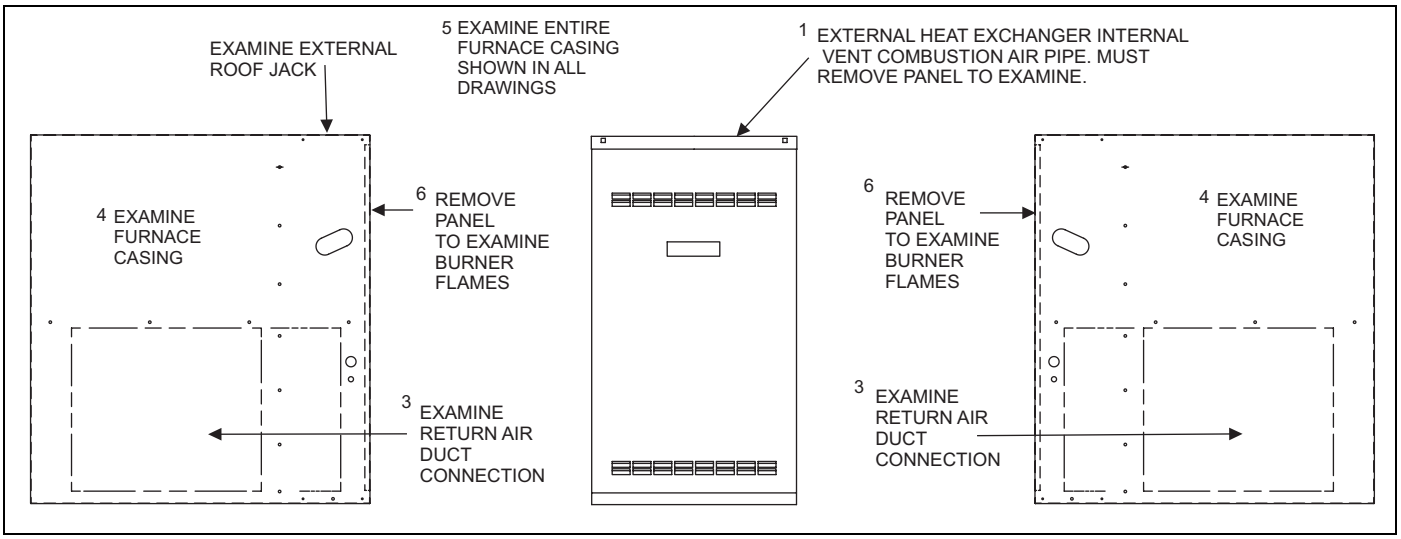

EXAMINE EXTERNAL ROOF JACK
5 EXAMINE ENTIRE FURNACE CASING SHOWN IN ALL DRAWINGS
1 EXTERNAL HEAT EXCHANGER INTERNAL VENT COMBUSTION AIR PIPE. MUST REMOVE PANEL TO EXAMINE.
4 EXAMINE FURNACE CASING
6 REMOVE PANEL TO EXAMINE BURNER FLAMES
3 EXAMINE RETURN AIR DUCT CONNECTION
6 REMOVE PANEL TO EXAMINE BURNER FLAMES
4 EXAMINE FURNACE CASING
3 EXAMINE RETURN AIR DUCT CONNECTION

FIGURE 3: Furnace Examination Checkpoints - Upflow

HOW YOUR GAS FURNACE WORKS

Your furnace is a very easy appliance to take for granted. Season after season, it sits there in your home, keeping you warm and comfortable. For this reason, you may never have given much thought to the way your furnace operates. In order to get the safest and most efficient operation from your furnace, you should understand how your furnace does its job.

When you set your thermostat to provide more heat in your home, you are starting the heating cycle of the furnace. First, the inducer motor starts to purge the heat exchanger of any remaining gases. Next, the hot surface ignitor glows and after a warm-up period the gas valve opens and ignition occurs. A short time later, the blower starts and distributes the warm air throughout the home. When the temperature setting on your thermostat is reached, the gas valve closes, the main burners are turned off, and the blower continues to run until the remaining warm air in the system is distributed. When the blower stops, the heating cycle has ended.

START-UP AND SHUTDOWN INSTRUCTIONS

Read the Instructions Below Before Trying to Start the Furnace

⚠WARNING

If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury, and/or loss of life.

A. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.

B. BEFORE OPERATING; smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

C. Use only your hand to push the gas control switch to the “on” position. Never use tools. If the switch will not operate by hand, don’t try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.

D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control, which has been under water.

Operating Instructions:

1. STOP! Read the safety information above.
2. Set the thermostat to the lowest setting.
3. Turn off all electric power to the appliance.
4. Remove burner door.
5. Move gas control switch to the “OFF” position. Do not force. See Figure 4.
6. Wait five (5) minutes to clear out any gas. If you then smell gas, STOP! Follow “B” in the safety information above. If you don’t smell gas, go to next step.
7. Move gas control switch to the “ON” position. Do not force. See Figure 4.
8. Replace burner door.
9. Turn on all electric power to the appliance.
10. Set thermostat to the desired setting. Burner will light, which may take 30-60 seconds.
11. After three (3) trials for ignition, if the appliance will not operate follow the instructions, “TO TURN OFF THE APPLIANCE” and call your service technician or gas supplier.

To Turn Off the Appliance:

1. Set the thermostat to lowest setting.
2. Turn off all electric power to the appliance if service is to be performed.
3. Remove burner access panel.
4. Move gas control switch to the “OFF” position. See Figure 4.
5. Replace burner access panel.

⚠WARNING

Should overheating occur, or the gas valve fail to shut off, turn the external manual gas valve in the gas supply line to the furnace to the “off” position and let the furnace cool off before shutting off the electrical power supply. Refer to Figure 5.

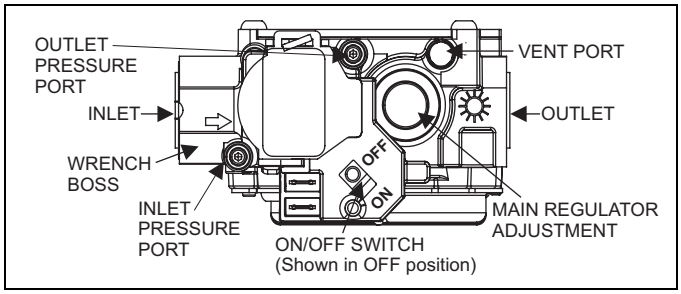


FIGURE 4: Gas Valve

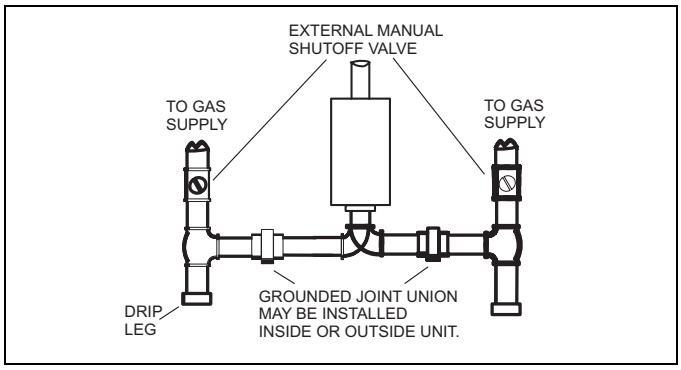

EXTERNAL MANUAL SHUTOFF VALVE
TO GAS SUPPLY
TO GAS SUPPLY
DRIP LEG
GROUNDED JOINT UNION MAY BE INSTALLED INSIDE OR OUTSIDE UNIT.

FIGURE 5: Gas Piping

NOTE: The spring-loaded safety cut-off switch, mounted behind the blower access panel will automatically cut off the electrical power supply to the furnace when the blower panel is removed. As a safety precaution, all electrical power and the gas supply to the furnace should be turned off before servicing.

FURNACE USER MAINTENANCE

⚠WARNING

Before proceeding, be sure the area is well ventilated. Turn the thermostat OFF. If the blower is running, wait until it stops automatically. Turn OFF the gas and electrical power supplies to the furnace. Check all metal parts and surfaces to be sure they have cooled to room temperature before you begin.

Every time the filters are changed the following items should be visually inspected:

- Check combustion air and exterior roof jack vent pipe for blockage or leakage.
- Check all components to be sure they are in good condition and that there are no obvious signs of deterioration.
- Check the drain lines to make sure there are no cracks or leaks.
- Check for dirt or lint on any surfaces or on components. Do not try to clean any of the surfaces or components. Cleaning of the furnace and its components must be done by a qualified service professional.

If, during the inspection of your furnace, you find any of the following conditions:

- Excessive amounts of dust and lint on components.
- Damaged or deteriorated components or surfaces.
- Leaks or blockage in the vent pipe passages.
- Water on any surface inside or outside of the furnace.

Do not operate the furnace, call a certified dealer / servicing contractor to check and / or clean your furnace, or for more information if you have questions about the operation of your furnace.

If all components appear to be in good operating condition, replace the front panels. Turn ON the gas and electrical power supplies to the furnace, and set thermostat to the desired temperature.

Air Filters

Dirty filters greatly restrict the flow of air and may cause damage to the moving parts of the furnace. If the filters become clogged the heat exchangers and blower motor could overheat resulting in a potentially dangerous situation.

The filters should be checked every 3 months. On new construction, check the filters every week for the first four weeks and every three weeks after that, especially if the indoor fan is running continuously. When replacing the filter(s) you must use filters that are the same size as those recommended in Table 1. Use the following procedure to determine the filter size. Never operate your furnace without a suitable air filter.

1. Locate the cabinet size on Table 1, then determine whether you have a bottom, side or top return using the following method.
   a. If the return air filters are on the left or right side of the furnace it is a side return. Refer to Figure 6.
   b. If the air filter is on the bottom of the furnace then you have a bottom return. Refer to Figure 7.
   c. If the air filters are on the bottom and the side of the furnace then you have a bottom and side return. You must replace both air filters. Brackets with the number two (2) before the filter size requires 2 filters. Refer to Figures 6 and 7.
   d. If the air filters are on both sides of the furnace then you have a (2) sided return. You must replace both air filters.
2. After you determine the cabinet size and what return configuration you have, look up the recommended filter size from Table 1. You must replace the air filters with the same size as recommended.

Removing Filters

Externally Mounted Air Filters

The air filter is in a rack that is attached to the casing of the furnace or placed in the return air duct. Figures 6 and 7 indicate possible external air filter box locations.

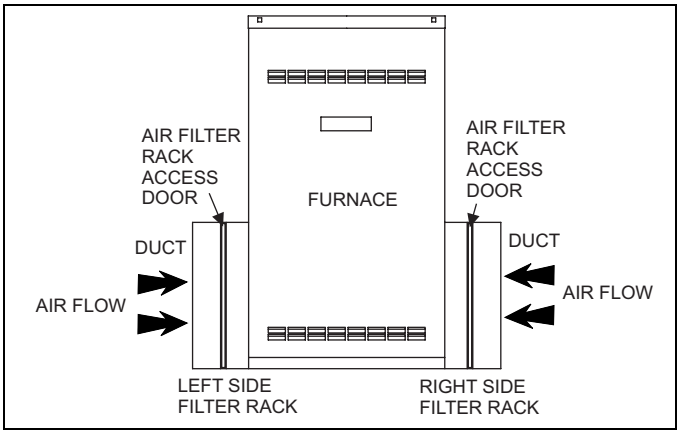


FIGURE 6: External Air Filter Rack - Left & Right Side Position

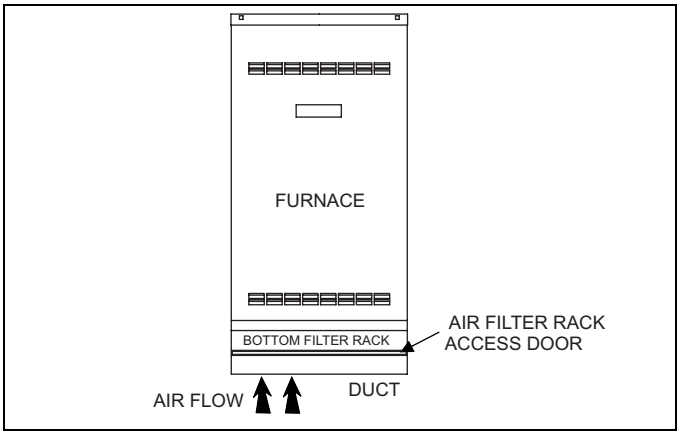


FIGURE 7: External Air Filter Rack - Bottom Position

To remove the filter you must do the following:

1. Before proceeding, be sure the area is well ventilated. Follow instruction “To turn off the appliance”. Check all metal parts and surfaces to be sure they have cooled to room temperature before you begin.
2. Remove the door by removing the retaining screw(s), if provided.
3. Remove the air filter by pulling on it. The air filter will slide out of the rack.
4. Replace throw away filter(s)) with the same size new filter(s). Throw away filter(s)) may be replaced with cleanable filter(s) at this time. Cleanable filter(s) may be cleaned as described in the manufacturer instructions or as described in these instructions.

To replace the filter after cleaning you must do the following:

5. Slide filter into place. If the filter has been cleaned, make sure it is dry before re-installing it.
6. Replace the door or cover panel and tighten the retaining screws, if provided.
7. Make sure the door is secure to the end of the filter rack and sealed to prevent leaks.
8. Follow the Operating Instructions to place the furnace back in operation.

TABLE 1: Filter Sizes

Cabinet Size	Side Return		Bottom/End Return	
	in.	cm	in.	cm
C	25 x 16	64 x 41	24 x 15	61 x 38

How to Clean your Filter

High-velocity filters may be cleaned with a vacuum cleaner or washed with a garden hose. Be sure to shake off excess water and allow filter to completely dry before re-installing the filter.

Blower Care

Even with good filters properly in place, blower wheels and motors will become dust laden after long months of operation. The entire blower assembly should be inspected annually. If the motor and wheel are heavily coated with dust, they can be brushed and cleaned with a vacuum cleaner. If the blower cannot be properly cleaned without removing it from the furnace, then call a qualified service agency. Only a qualified service agency can perform this service.

⚠WARNING

Make sure you DO NOT move the clip on weight on the indoor fan wheel when cleaning the wheel. This weight is used to balance the wheel. Moving the weight will cause the fan wheel to vibrate.

Motor Lubrication

The motors in these furnaces are permanently lubricated, and do not require periodic oiling.

SECTION II: SERVICE AND MAINTENANCE MANUAL

SAFETY SECTION

This section has been designed to assist a qualified service agency in performing service and maintenance on this appliance. The homeowners and/or end user must never attempt to perform any service or maintenance on the appliance especially when it involves the removal or adjustment of any parts and/or components.

The following safety rules must be followed when servicing the furnace.

⚠WARNING

ELECTRIC SHOCK, FIRE OR EXPLOSION HAZARD

Failure to follow safety warnings exactly could result in dangerous operation, serious injury, death or property damage.

Improper servicing could result in dangerous operation, serious injury, and death or property damage.

- Before servicing, disconnect all electrical power to the furnace.
- When servicing controls, label all wires prior to disconnecting. Reconnect wires correctly.
- Verify proper operation after servicing.

FURNACE MAINTENANCE SECTION

The furnace should be cleaned and adjusted by a certified dealer or qualified service contractor once a year or before the start of every heating season. The following items must be cleaned and serviced or replaced if there are signs of deterioration.

1. The vent terminal screen (if applicable).
2. The furnace vent and combustion air intake passageways. Should it be necessary to service the vent/air intake system, the manufacturer recommends this service be conducted by a qualified service agency. The operation of this appliance requires the reassembly and resealing of the vent/air intake system.
3. The furnace burners, ignitor and flame sensor.

FURNACE CLEANING SECTION

NOTE: The cleaning operations listed below must be performed only by a qualified service agency.

Burner Removal/Cleaning

The main burners should be checked periodically for dirt accumulation. If cleaning is required, follow this procedure:

1. Turn off the electrical power to the unit.
2. Turn off the gas supply at the external manual shut-off valve and loosen the ground union joint.
3. Remove the upper access panel.

4. Disconnect wires from flame sensor, rollout switch and HSI igniter. Remove igniter carefully, as it is easily broken.
5. Remove the screws that hold the burner box assembly to the vest panel and remove the assembly.
6. Remove burners from the burner assembly.
7. Rinsing in hot water may clean burners.
8. Reassemble in the reverse order.

Cleaning the Heat Exchanger

NOTE: It is recommended that replacement gaskets be available before removing vent motor.

Lower Heat Exchanger Access

1. Turn off the electrical power to the unit and turn off gas supply at the shutoff valve.
2. Remove the blower and burner compartment access doors. Disconnect the gas supply piping at the union to permit removal of the entire burner and gas control assembly from the vestibule panel. Use a wrench on the wrench boss on the gas valve when removing or installing this piping. Refer to Figure 4.
3. Unplug the igniter from the wire harness. Disconnect sensor and rollout switch wires located on top of the air shield. Identify and note the location of all leads for ease of reinstallation. Also disconnect the wires at the side rollout switches (upflow only) and the gas valve wires.
4. Remove the screws holding the burner assembly to the vestibule panel and remove this assembly. Handle the assembly carefully since it contains the igniter, which is fragile and easily broken. The lower portion of the heat exchanger will now be exposed. With a long flexible wire brush, clean inside of each heat exchanger at both the top and bottom. The brush must pass around the rear heat exchanger to remove any soot and scale. Vacuum loose soot, scale and dirt from each heat exchanger.
5. After cleaning is complete, replace all components in reverse order. Re-gasket all surfaces which required a gasket. Reconnect all wiring. Reattach vent pipe and gas supply lines before restoring service to furnace. Restore electrical power, check gas supply piping for leaks, and then verify furnace operation.

Upper Heat Exchanger Access

1. Perform steps 1 - 4 in cleaning the heat exchanger.
2. Unplug the vent motor wires and ground wire. Remove the pressure switch tubing at the tap on the vent motor housing.
3. Disconnect vent piping from the vent motor assembly.
4. Remove the screws that secure the vent motor assembly to the flue box and remove the vent motor assembly. The surface is also gasketed so be extra careful not to tear the gasket.
5. Remove the screws from the flue box that secure the flue box to the vestibule panel and remove the flue box. The surface is also gasketed so be extra careful not to tear the gasket.
6. The upper portion of the heat exchanger is now accessible. With a long flexible wire brush, clean inside of each heat exchanger at both the top and bottom. The brush must pass around the rear heat exchanger to remove any soot and scale. Vacuum loose soot, scale and dirt from each heat exchanger.
7. After cleaning is complete, replace all components in reverse order. Re-gasket all surfaces which required a gasket. Reconnect all wiring. Reattach vent pipe and gas supply lines before restoring service to furnace. Restore electrical power, check gas supply piping for leaks and then verify furnace operation.

⚠ CAUTION

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

SEQUENCE OF OPERATION

Continuous Blower

On cooling/heating thermostats with fan switch, when the fan switch is set in the ON position, a circuit is completed between terminals R and G of the thermostat. The blower motor is energized through the cool fan terminal on the ignition control module.

Intermittent Blower - Cooling

On cooling/heating thermostats with fan switch, when the fan switch is set in the auto position and the thermostat calls for cooling, a circuit is completed between the R, Y and G terminals. The motor is energized through the cool fan terminal and runs on the selected speed. The fan off setting is fixed at 60 seconds for SEER enhancement.

Heating Cycle

When the system switch is set on HEAT and the fan is set on AUTO, and the room thermostat calls for heat, a circuit is completed between terminals R and W of the thermostat. When the proper amount of combustion air is being provided, a pressure switch activates the ignition control.

The ignition control provides a 17-second warm-up period. The gas valve then opens for 10 seconds.

As the gas starts to flow and ignition occurs, the flame sensor begins its sensing function. If a flame is detected during the 10 second flame stabilization period the circulating blower will energize 30 seconds after the gas valve opens (20 seconds after the flame stabilization period ends). Normal furnace operation will continue until the thermostat circuit between R and W is opened. When the thermostat circuit opens, the ignition control is de-energized. When the ignition control is de-energized, the gas flow stops, and the burner flames are extinguished. The ventor continues to operate for 15 seconds after the gas flow stops.

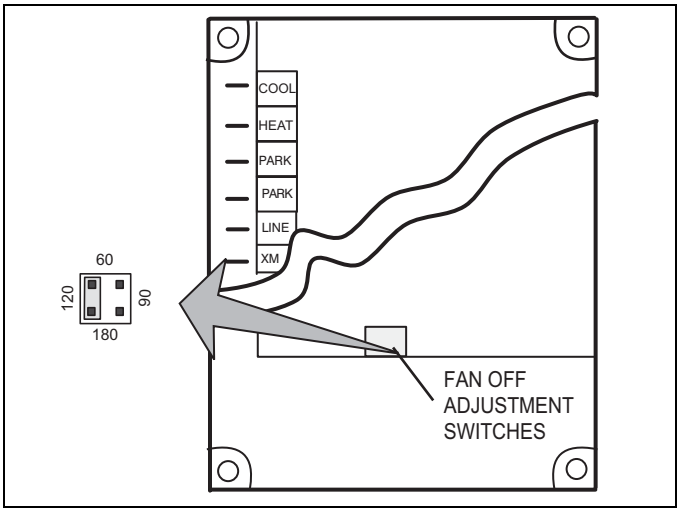


FIGURE 8: Typical Heat/Cool Speed Tap Connections

The blower motor continues to operate for the amount of time set by the fan-off delay "Jumper" located on the ignition control board (Figure 16). The heating cycle is complete, and the furnace is ready for the start of the next heating cycle.

If the flame is not detected within 2 seconds of the gas valve opening, the gas valve is shut off and a retry operation begins. If the flame is lost for 2 seconds during the 10 second stabilization period, the gas valve is shut off and a retry operation begins. During a retry operation the ventor starts a 15 second inter-purge and the ignitor warm-up time is extended to 27 seconds. If the flame is established for more than 10 seconds after ignition, during a retry, the control will clear the ignition attempt (retry) counter. If three retries occur during a call for heat, the furnace will shut down for one hour. If at the end of the one hour shut down there is a call for heat, the furnace will initiate a normal start cycle. If the problem has not been corrected the furnace will again lockout after three retries.

A momentary loss of gas supply, flame blowout, or a faulty flame probe circuit will result in a disruption in the flame and be sensed within 0.8 seconds. The gas valve will de-energize and the control will begin a recycle operation. A normal ignition sequence will begin after a 15 second inter-purge. If during the five recycles the gas supply does not return, or the fault condition is not corrected the ignition control will lockout for 60 minutes.

During burner operation, a momentary loss of power for 50 milliseconds or longer will de-energize the gas valve. When the power is restored, the gas valve will remain de-energized and the ignition sequence will immediately restart.

Hot Surface Ignition System

⚠WARNING

HOT SURFACE IGNITION SYSTEM

Do not attempt to light this furnace by hand (with a match or any other means). There may be a potential shock hazard from the components of the hot surface ignition system. The furnace can only be lit automatically by its hot surface ignition system.

TROUBLESHOOTING

The following visual checks should be made before troubleshooting:

1. Check to see that the power to the furnace and the ignition control module is ON.
2. The manual shut-off valves in the gas line to the furnace must be open.
3. Make sure all wiring connections are secure.
4. Review the sequence of operation. Start the system by setting the thermostat above the room temperature. Observe the system's response. Then use the troubleshooting section in this manual to check the system's operation.

A momentary loss of gas supply, flame blowout, or a faulty flame probe circuit will result in a disruption in the flame and be sensed within 1 second. The gas valve will de-energize and the control will begin a recycle operation. A normal ignition sequence will begin after a 15 second inter-purge. If during the five recycles the gas supply does not return, or the fault condition is not corrected the ignition control will lockout for one hour.

During burner operation, a momentary loss of power for 50 milliseconds or longer will de-energize the gas valve. When the power is restored, the gas valve will remain de-energized and the ignition sequence will immediately restart.

⚠WARNING

Never bypass pressure switch to allow furnace operation. To do so will allow furnace to operate under potentially hazardous conditions.

Do not try to repair controls. Replace defective controls with UPG Source 1 Parts.

Never adjust pressure switch to allow furnace operation.

FURNACE CONTROL DIAGNOSTICS

The furnace has built-in, self diagnostic capability. If a system problem occurs, a fault code is shown by a blinking red LED. It is located behind a clear view port in the blower compartment door. DO NOT remove the furnace blower compartment panel OR turn off furnace power as either action will clear the control's memory of the fault.

The control continuously monitors its own operation and the operation of the system. If a failure occurs, the LED will indicate the failure code. If the failure is internal to the control, the light will stay on continuously. In this case, the entire control should be replaced as the control is not field repairable.

Flash sequence codes 1 through 11 are as follows: LED will turn "on" for one second and "off" for one second. This pattern will be repeated the number of times equal to the code. For example, six "on" flashes equals a number 6 fault code.

All flash code sequences are broken by a 2 second "off" period.

IGNITION CONTROL
Normal flame sense current is approximately
3.7 microamps DC (υa)
Low flame signal control lockout point is
0.9 microamps DC (υa)

1 FLASH: This indicates that flame was sensed when there was not a call for heat. With this fault code the control will turn on both the inducer motor and supply air blower. This fault would typically be caused by a gas valve that leaks through or is slow closing.

2 FLASH: This indicates that the normally open pressure switch contacts are stuck in the closed position. The control confirms these contacts are open at the beginning of each heat cycle. This would indicate a faulty pressure switch or mis-wiring.

3 FLASH: This indicates the normally open pressure switch contact did not close at the beginning of the heat cycle. This could be caused by a number of problems; faulty inducer, blocked vent pipe, broken pressure switch hose or faulty pressure switch.

4 FLASH: This indicates that a primary or auxiliary limit switch has opened its normally closed contacts. With this fault code the control will operate the supply air blower and inducer. This condition may be caused by: dirty filter, improperly sized duct system, incorrect blower speed setting, incorrect firing rate or faulty blower motor.

5 FLASH: This fault is indicated if the normally closed contacts in the rollout switch opens. The rollout control is manually reset. If it has opened, check for proper combustion air, proper inducer operation, primary heat exchanger failure or burner problem. Be sure to reset the switch after correcting the failure condition.

6 FLASH: This indicates that after the unit was operating, the pressure switch opened 4 times during the call for heat. If the main blower is in a "Delay on" mode it will complete it, and any subsequent delay off period. The ventor continues to operate until the pressure switch re-closes or a call for heat is removed.

7 FLASH: This fault code indicates that the flame could not be established. This no-light condition occurred 3 times (3 retries) during the call for heat before locking out. This may be caused by low gas pressure, faulty gas valve, faulty hot surface ignitor or burner problem.

8 FLASH: This fault is indicated if the flame is lost 5 times (5 recycles) during the heating cycle. This could be caused by low gas pressure or faulty gas valve.

9 FLASH: Indicates reversed line voltage polarity. Both heating and cooling operations will be affected. Check polarity at furnace and branch.

11 FLASH: This fault will be indicated if the rollout jumper wire connection soldered into the board, is broken. If this fault occurs the control will have to be replaced.

STEADY ON: This fault occurs if the gas valve is energized when there is no call for heat. If this happens the ventor is energized and will remain energized for 5 seconds or until the fault clears itself at which point the ventor de-energizes. This failure is counted as a recycle. Check the gas valve and control for proper operation.

60 MINUTE AUTOMATIC RESET FROM LOCKOUT: This control includes a "watchdog" type circuit that will reset from a lockout condition after 60 minutes. Operational faults 1,6,7,8 and Steady On will be reset. This provides protection to an unoccupied structure if a temporary condition exists causing a furnace malfunction. An example would be a low incoming gas supply pressure preventing unit operation. When the gas pressure is restored, at some point the "watchdog" would restart the unit and provide heat for the house.

NOTE: If a flame is detected the control flashes the LED for 1/8 of a second and then enters a flame stabilization period.

⚠WARNING

Never jump pressure switch to allow furnace operation. To do so will allow furnace to operate under potentially hazardous conditions.

Do not try to repair controls. Replace defective controls with UPG Source 1 Parts.

Never adjust pressure switch to allow furnace operation.

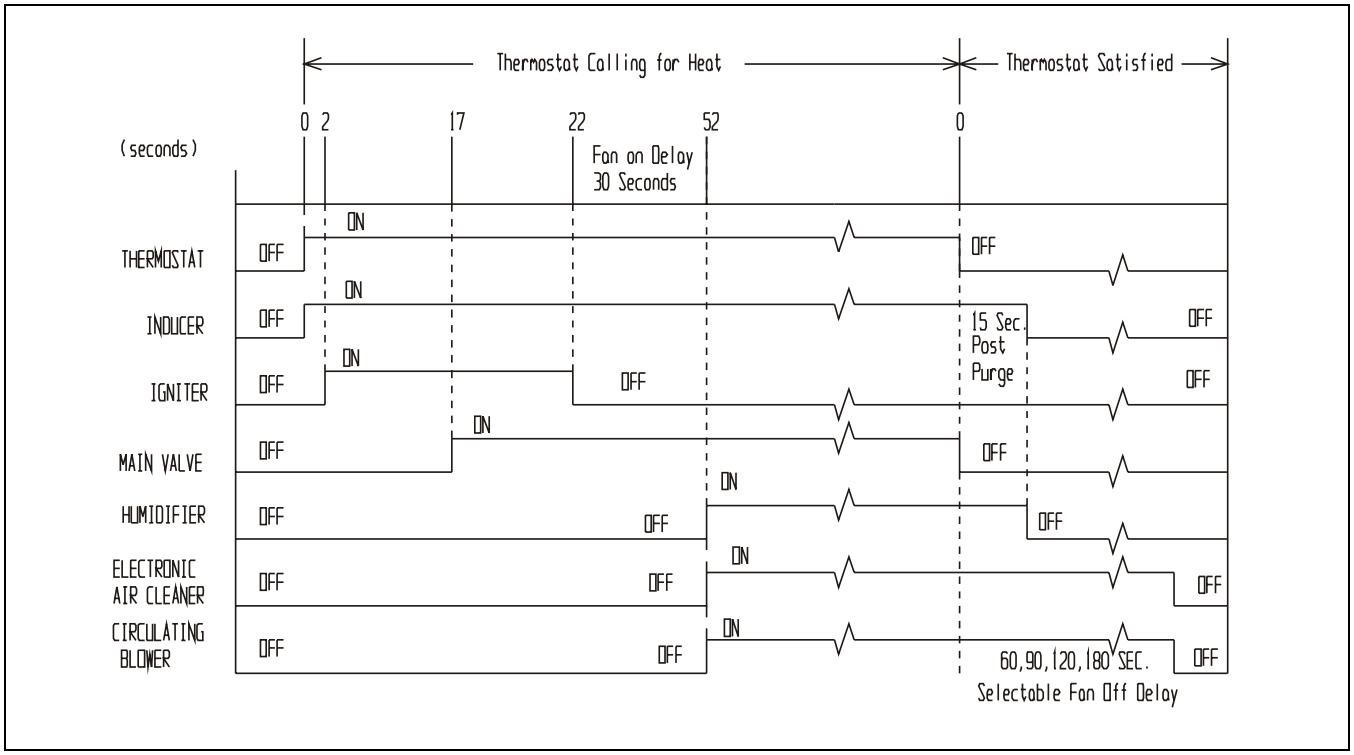
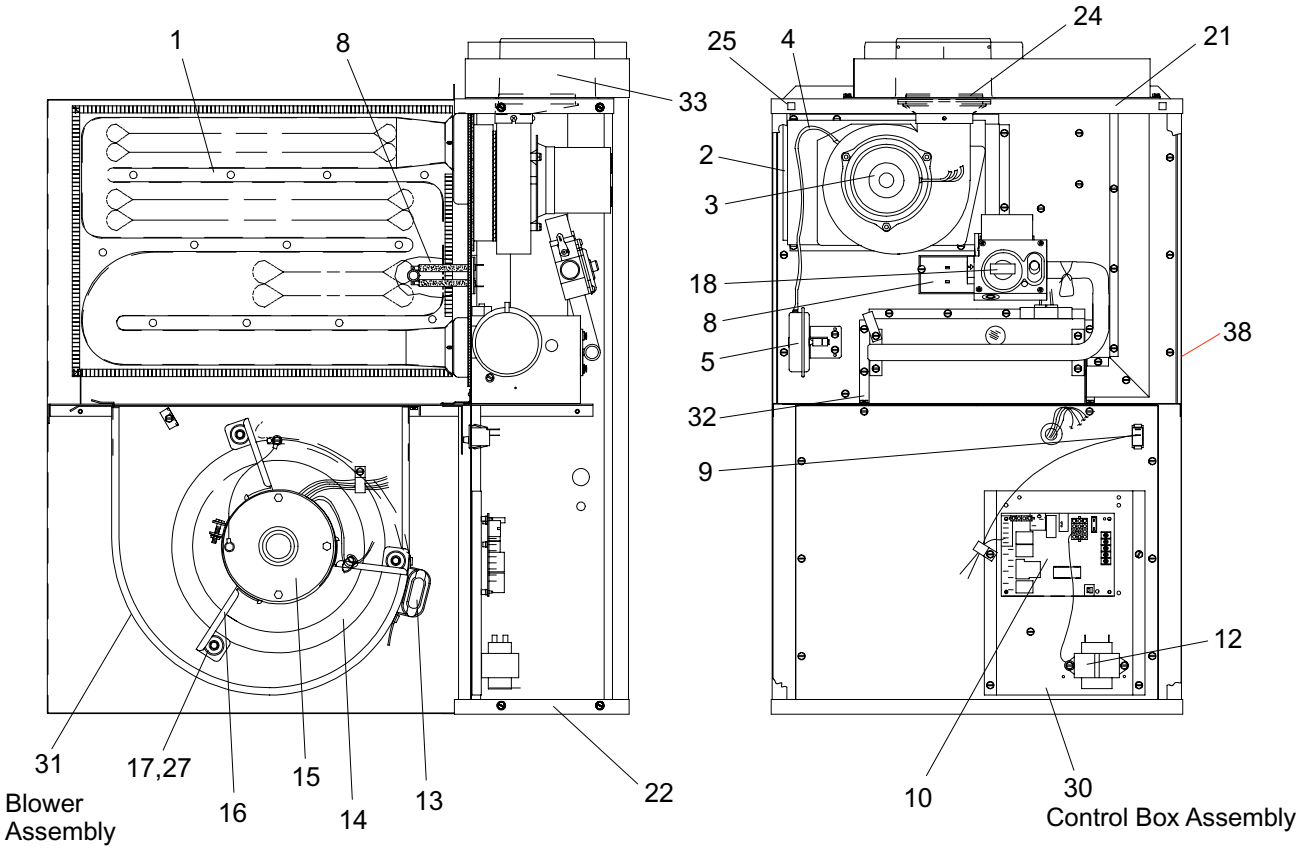
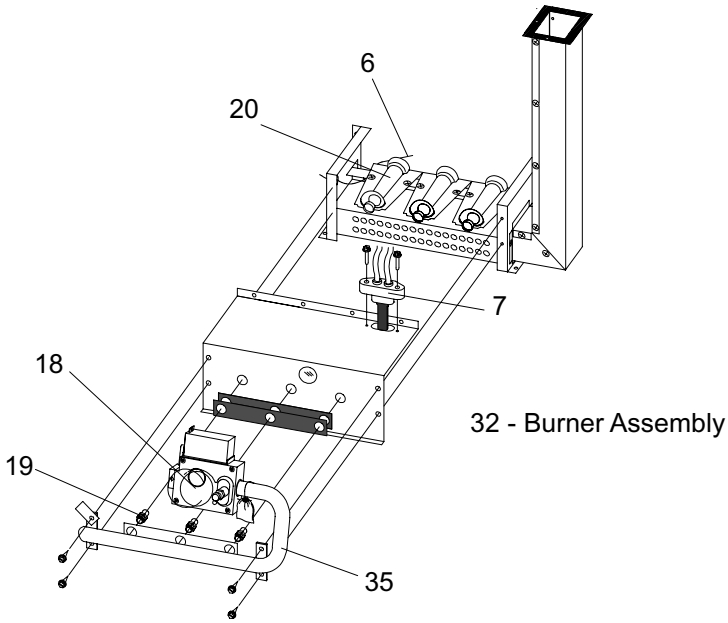


FIGURE 9: Furnace Event Control Schedule

REPLACEMENT PARTS LIST





ITEM	DESCRIPTION
1	Heat Exchanger Assembly
2	Gasket, Vent Blower
3	Blower, Vent
4	Tube, Pressure (15")
5	Switch, Pressure
6	Rod, Sensor
7	Ignitor
8	Switch, Limit (open 155 deg.)
9	Switch, Door
10	Control, Integrated
11*	Harness, Wire
12	Transformer (40VA)
13	Capacitor (10MFD, 370V)
14	Wheel, Blower
15	Motor, Blower
16	Mount, 1-PC. Motor
17	Motor Mounts, Rubber (3 Req'd)
18	Valve, Gas
19	Orifice, Gas (Natural-0-2,000 Ft.) Orifice, Gas (LP-0-2,000 Ft.) Orifice, Gas (Natural-High Altitude-2,000-5,000 Ft.) Orifice, Gas (Natural-High Altitude-5,000-7,000 Ft.) Orifice, Gas (LP-High Altitude-2,000-7,000 Ft.)

ITEM	DESCRIPTION
20	Burner (3 Req'd)
21*	Door, Top
22	Casing, Bottom Cap
23*	Plate, Logo/Bezel
24	Transition (4")
25	Clip, Door Latch (2 per pkg.)
26*	Gasket Package
27	Spacer (Ferrule) (3 Req'd)
28*	Switch, Roll Out (3 Req'd)
29*	Thermostat, Heat/Cool
30	Control Box Assembly (Ref Only)
31	Blower Assembly
32	Burner Assembly (Ref Only)
33	Air Box Assembly (Ref Only)
34*	Strain Relief Bushing
35*	Manifold, Gas
36*	Diagram, Wiring
37*	Housing, Blower
38	Wrapper, Casing

NOTE:	*Not Shown
	Major components and suggested stocking items are shown with shaded item number.

FIELD INSTALLED ACCESSORIES - NON-ELECTRICAL

Field Installed Accessories-Non-Electrical		
Model No.	**Description**	**USED WITH**
1NP0805	PROPANE (LP) CONVERSION KIT	50, 7512
1NP0806	PROPANE (LP) CONVERSION KIT	7516, 10016
1LN0802	LOW NOX KIT	ALL MODELS
1FF0110	FILTER FRAME KIT	50, 7512
1FF0112	FILTER FRAME KIT	7516, 10016
1HA0802	HIGH ALTITUDE INSTRUCTION PACKET (DOES NOT INCLUDE ORIFICES)	ALL MODELS

REPLACEMENT PART CONTACT INFORMATION

This is a generic parts list. To request a complete parts list, refer to the contact information below:

- Visit our website at www.source1parts.com for the following information:
  1. Search for a part or browse the catalog.
  2. Find a dealer or distributor.
  3. Customer Service contact information.
     a. Click on the "Brand Links" button
     b. Click on the "Customer Service" button
- You can contact us by mail. Just send a written request to:

York International
Consumer Relations
5005 York Drive
Norman, OK 73069

SECTION III: WIRING DIAGRAM

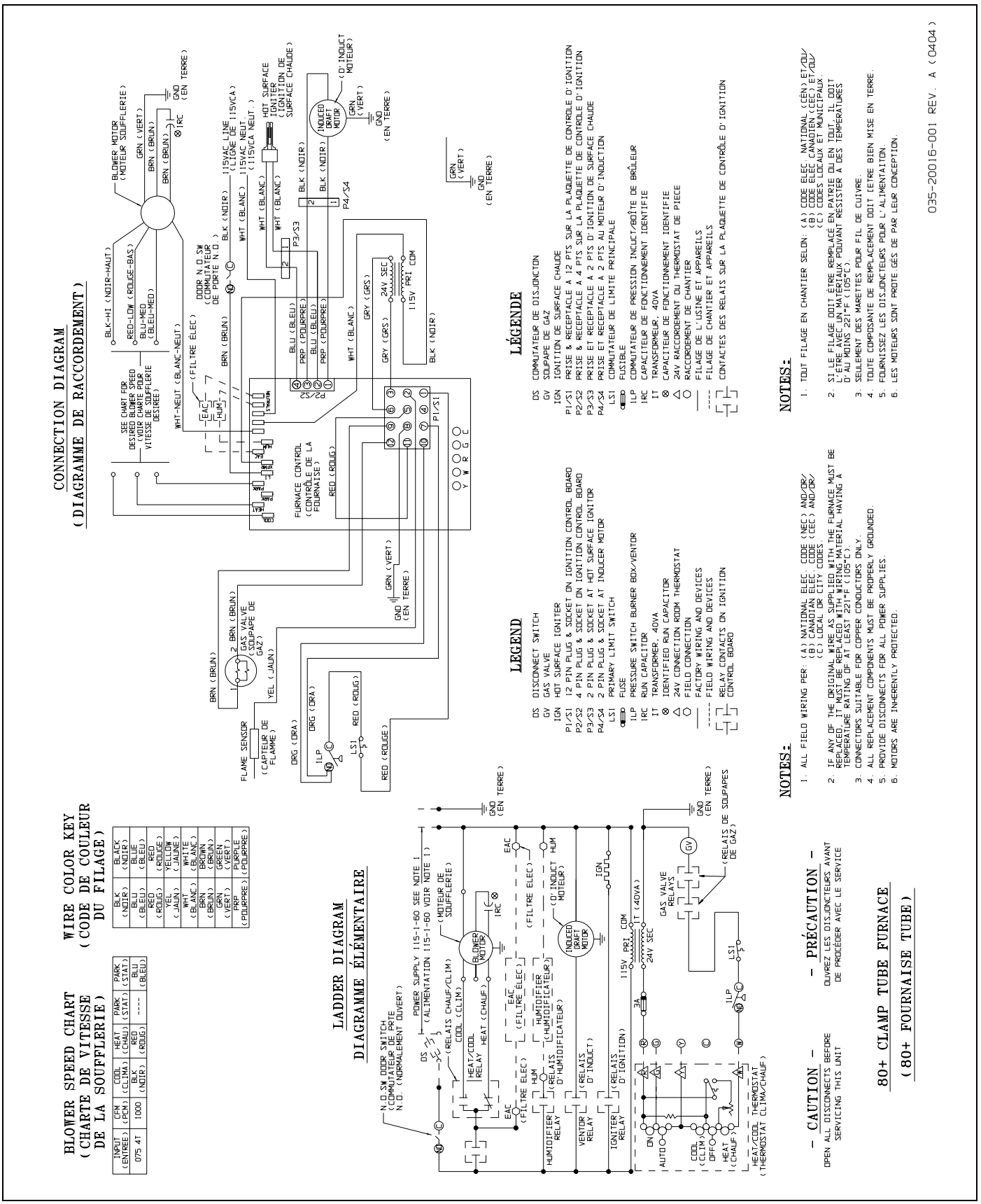


FIGURE 10: Wiring Diagram

Limited Warranty

Manufactured Housing Furnace

UPG warrants this product to be free from defects in factory workmanship and material under normal use and service and will replace parts that prove to have such defects according to the terms outlined below.

Furnace Type	Heat Exchanger	Coleman, Vexar		Evcon, Red-T		
		Parts	Labor, Trip	Parts	Labor	Trip
UGAE	10 years	2 years	2 years	1 year	30 day	None

The warranty period for any replacement heat exchanger or part provided here under shall not extend beyond the warranty period stated above. The heat exchanger warranty is on a parts only basis: no labor, freight or other service charges are allowed.

The warranty period will begin on the purchase date of the residence when the product is installed as original equipment, or the installation date when installed in a residence previously purchased by the consumer. Return the Warranty Registration Card to UPG promptly after product installation or purchase for your benefit and protection. The warranty period will begin upon product shipment from UPG in the absence of a recorded Warranty Registration Card.

This warranty applies to the original consumer/purchaser and any subsequent purchaser. The warranty does not apply if the furnace is removed from the original residence, or if the residence has been moved from the original location where the furnace was placed in service.

This warranty applies only to products installed: (1) in the United States of America or Canada; (2) in accordance with UPG recommendations and specifications outlined in the Installation Manual provided with the product; (3) in accordance with all national, state/provincial, and local codes; and (4) in the original residence.

Exclusions

1. Shipping/freight, labor or material charges.
2. Damages resulting from transportation, mishandling, improper application, installation or servicing.
3. Damages resulting from accident, abuse, fire, flood, or other acts of nature.
4. Use of the product in a corrosive atmosphere.
5. Alteration, tampering, defacing or removing the product serial number will serve to void the warranty.
6. Damages resulting from inadequacy or interruption of electrical service, improper energy supply, blown fuses, improper wiring external to the unit or other like damages.
7. Damages resulting from the use of components not approved by UPG.
8. This warranty does not cover consequential damages, incidental damages or incidental expenses including damages to property.
9. Damages caused by failure to perform normal or routine maintenance as set out in the operation and service instructions.
10. Cleaning, replacement of filters, or any other routine maintenance as set out in the User's Information, Maintenance and Service Manual.
11. Replacement or cleaning of nozzles or orifices.
12. Fuses either internal or external to the product.
13. Excessive fuel or electricity consumption.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SOME STATES DO NOT ALLOW THE DISCLAIMER OF IMPLIED WARRANTY, SO THAT THE ABOVE DISCLAIMER MAY NOT APPLY TO YOU.

SOME STATES ALLOW ONLY A PARTIAL LIMITATION ON IMPLIED WARRANTIES, OR LIMIT THE DURATION OF IMPLIED WARRANTIES TO THE DURATION OF THE EXPRESS WARRANTY. IN SUCH STATES, THE DURATION OF IMPLIED WARRANTIES IS HEREBY EXPRESSLY LIMITED TO THE DURATION OF THE EXPRESS WARRANTY ON THE FACE HEREOF. IN NO EVENT, WHETHER AS A RESULT OF BREACH OF WARRANTY OR CONTRACT TORT (INCLUDING NEGLIGENCE) STRICT LIABILITY OR OTHERWISE, SHALL UPG BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOSS OF USE OF THE EQUIPMENT OR ASSOCIATED EQUIPMENT, LOST REVENUES OR PROFITS, COST OF SUBSTITUTE EQUIPMENT. THIS WARRANTY DOES NOT COVER CONSEQUENTIAL DAMAGES. THE ABOVE LIMITATIONS SHALL INURE TO THE BENEFIT OF UPG SUPPLIERS AND SUBCONTRACTORS. THE ABOVE LIMITATION ON CONSEQUENTIAL DAMAGES SHALL NOT APPLY TO INJURIES TO PERSONS IN THE CASE OF CONSUMER GOODS.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, OR FOR STRICT LIABILITY IN TORT, SO THAT THE ABOVE EXCLUSIONS AND LIMITATIONS MAY NOT APPLY TO YOU. UPG DOES NOT ASSUME, OR AUTHORIZE ANY PERSON TO ASSUME FOR UPG ANY LIABILITY FOR THE SALE OF THIS PRODUCT. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

TO OBTAIN WARRANTY SERVICE

For **Coleman, Vexar**: Consult the Authorized Service Center list packed with furnace installed in the manufactured home.

For **Evcon and Red-T brands**: Contact your installing or servicing dealer.

For all brands: Look in the Yellow Pages of the telephone book under Mobile Homes-Repair and Service for the name and telephone number of the nearest authorized manufactured housing service center. If local authorized service cannot be obtained, or you are unable to contact your installing contractor, contact the authorized distributor in your area. If there is no distributor in your area, and you cannot obtain proper service under the terms of the warranty, please write: Unitary Products Group (UPG) Customer Relations Department, PO Box 19014, Wichita, KS 67204-9014.

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